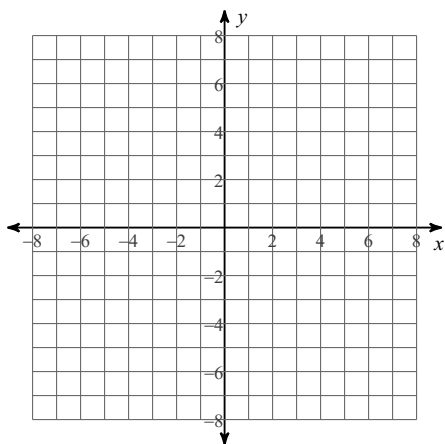


Unit 1 Day 9

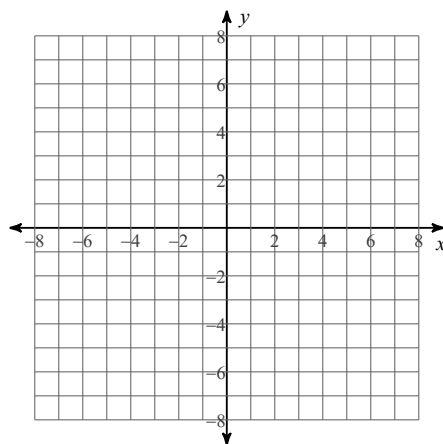
Date _____ Period _____

Sketch the graph of each function.

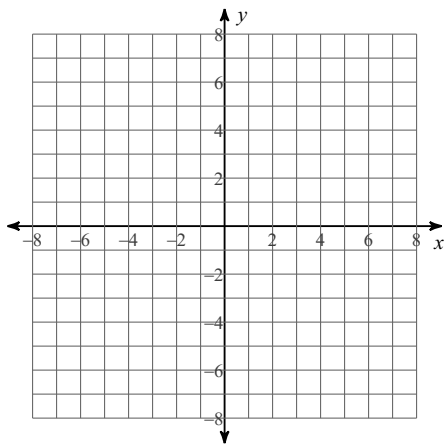
1) $f(x) = \begin{cases} -3, & x < -2 \\ -2x, & x \geq -2 \end{cases}$



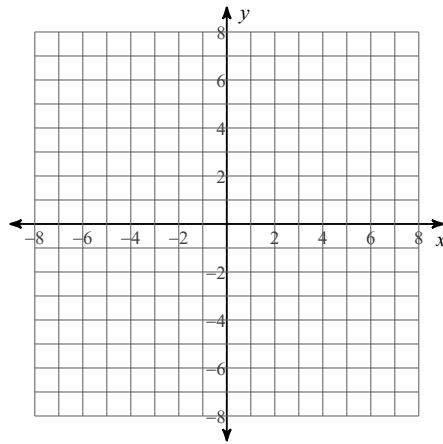
2) $h(x) = \begin{cases} (x+2)^2, & x < -2 \\ x^2 + 1, & x \geq -2 \end{cases}$



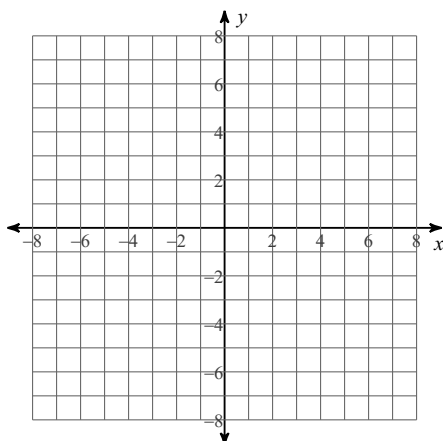
3) $f(x) = \begin{cases} (x+2)^2, & x \leq -2 \\ |x| - 3, & x > -2 \end{cases}$



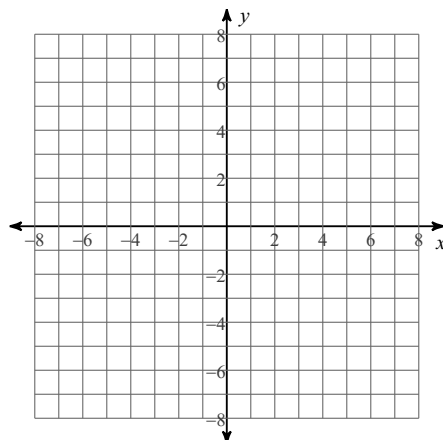
4) $f(x) = \begin{cases} -2|x|, & x < 2 \\ -|x|, & x \geq 2 \end{cases}$



$$5) w(x) = \begin{cases} (x+5)^2, & x < -4 \\ \frac{1}{x} - 2, & -4 < x \leq 3 \\ |x-4|, & x > 3 \end{cases}$$



$$6) w(x) = \begin{cases} x+4, & x < -2 \\ 4^x, & x = -2 \\ -|x|, & x > -2 \end{cases}$$



Perform the indicated operation.

$$7) f(n) = n^2 - 2n \\ g(n) = 2n - 4 \\ \text{Find } f(n) - g(n)$$

$$9) g(a) = a^3 - 3a^2 \\ h(a) = 3a - 4 \\ \text{Find } g(4) \cdot h(4)$$

$$11) h(x) = 2x - 1 \\ g(x) = 2x^3 + 2x^2 \\ \text{Find } h\left(\frac{x}{3}\right) \cdot g\left(\frac{x}{3}\right)$$

$$8) f(n) = -4n + 4 \\ g(n) = -2n^2 + 2 \\ \text{Find } (f - g)(n)$$

$$10) g(a) = a^2 + 4 \\ f(a) = 3a - 1 \\ \text{Find } g(2) \div f(2)$$

$$12) g(a) = 3a - 4 \\ f(a) = a^2 - 5a \\ \text{Find } (g + f)(a^2)$$

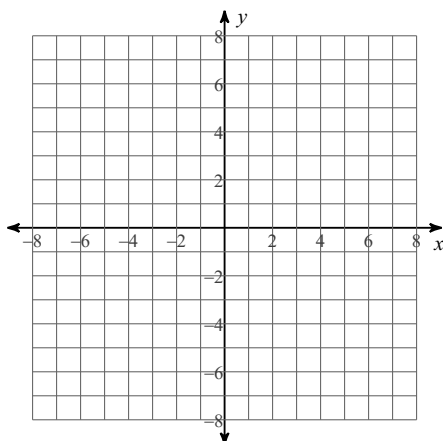
Describe the transformations necessary to transform the graph of $f(x)$ into that of $g(x)$.

$$13) f(x) = \sqrt{x} \\ g(x) = \sqrt{2x} + 3$$

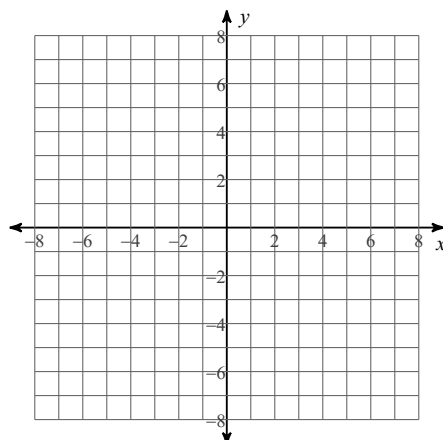
$$14) f(x) = |x| \\ g(x) = \frac{1}{3} \cdot |x - 1|$$

Sketch the graph of each function.

$$15) g(x) = 2\sqrt{-(x-1)}$$

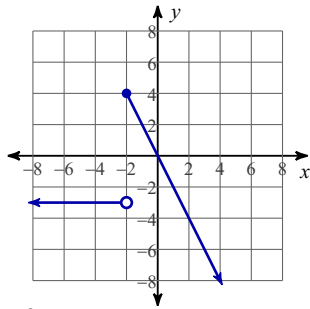


$$16) g(x) = \frac{1}{2} \cdot |x + 2| - 2$$

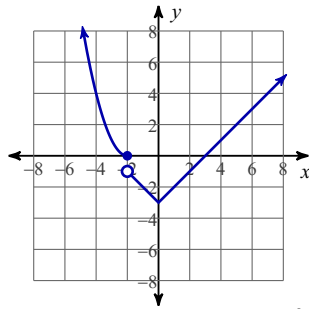


Answers to Unit 1 Day 9 (ID: 1)

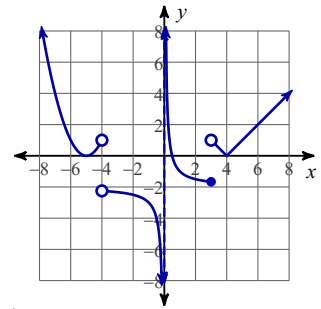
1)



3)



5)



7) $n^2 - 4n + 4$

9) 128

11) $\frac{6x^3 - 18x^2 + 4x^4}{81}$

13) compress horizontally by a factor of 2
translate up 3 units

15)

